

## CLAIMS:

1. Apparatus for determining a frame format of data received by a receiver, said frame format including a synchronization field which defines said frame format as being of a first or second type, the apparatus comprises a counter (32a) arranged to count a number of consecutive bits of the synchronization field of a received frame and determining, when  $N$  consecutive bits having the same plurality or logic value have been counted, if said frame format is of said first or second type, depending on the polarity or logic value of said  $N$  consecutive bits, where  $N$  is an integer greater than 1.  
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2. Apparatus according to claim 1, wherein said first frame format comprises a short frame format with a synchronization field having a first predetermined number of bits, and said second frame format comprises a long frame format with a synchronization field having a second predetermined number of bits, said second predetermined number being greater than said first predetermined number.  
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3. Apparatus according to claim 2, wherein said short frame format has a synchronization field comprising a first predetermined number of consecutive bits of a first plurality or logic value, and said second frame format has a synchronization field comprising a second predetermined number of consecutive bits of a second polarity or logic value, opposite to said first polarity or logic value.  
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4. Apparatus according to claim 3, wherein said synchronization field is scrambled prior to transmission thereof, and the apparatus comprises a corresponding descrambler (30) to which said received data frame is applied, the output of said descrambler (30) being applied to said counter (32a).  
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5. Apparatus according to any one of the preceding claims, wherein said data frame is spread by means of a direct sequence spread spectrum or frequency hopping spread spectrum technique prior to transmission thereof, and said apparatus comprises a  
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corresponding despreader (26) to which said received data frame is applied prior to the data being passed to said counter (32a).

6. Apparatus according to claim 5, comprising a demodulator (28) for  
5 demodulating the output data from said despreader (26), prior to the data being provided to  
said counter (32a).

7. Apparatus according to claim 6, wherein said demodulator (28) comprises a  
Differential Binary Phase Shift Keying demodulator.

10 8. Apparatus according to any one of the preceding claims, wherein data  
representative of said frame format type is output in the form of a training sequence for an  
equalizer (16).

15 9. Apparatus according to claim 8, wherein data representative of said frame  
format type and said training sequence are output substantially simultaneously.

10. Apparatus according to claim 8 or claim 9, wherein data output from said  
descrambler (30) of claim 4 is applied to scrambler (34), modulator (36) and data spreader  
20 (38) prior to being output as said training sequence.

11. Apparatus according to any of the preceding claims, wherein the receiver is a  
wireless receiver.

25 12. A decoder for use in a receiver, the decoder (22) including apparatus  
according to any one of the preceding claims.

13. A receiver including a decoder (22) according to claim 12.

30 14. A receiver according to claim 13, including an equalizer (16).

15. A receiver according to claim 14, wherein said equalizer (16) is an adaptive  
equalizer.

16. A receiver according to claim 15, when dependent on claim 8, claim 9 or claim 10, wherein said training sequence is provided to said adaptive equalizer (16).

17. A receiver according to claims 13, 14, 15 or 16, wherein the receiver is a  
5 wireless receiver.

18. A wireless local area network comprising at least one transmitter for transmitting frames of data, and at least one receiver according to any one of claims 12 to 15 for receiving said frames of data.

10 19. A wireless local area network according to claim 18, wherein the transmitter is a wireless transmitter, and the receiver is a wireless receiver.

15 20. A method of determining a frame format of data received by a receiver, said frame format including a synchronization field which defines said frame format as being a first or second type, the method comprising the steps of counting a number of consecutive bits of the synchronization field of a received frame and determining, when  $N$  consecutive bits having the same polarity or logic value have been counted, if said frame format is of said first or second type, depending on the polarity or logic value of said  $N$  consecutive bits,  
20 where  $N$  is an integer greater than 1.

21. A method according to claim 20, including the step of outputting data representative of said frame format type in the form of a training sequence for an equalizer, data representative of said frame format type and said training sequence being output  
25 substantially simultaneously.

22. A method according to claims 20 or 21 wherein the receiver is a wireless receiver.